SOLPLUS Inverters
SOLPLUS 25 – 55

Further information is available in:
SOLPLUS 25 – 55 Installation Instruction
SOLPLUS 25 – 55 User and Service Manual

SOLPLUS 25 – 55 IP 21 version

SOLPLUS 25 – 55 IP 54 version

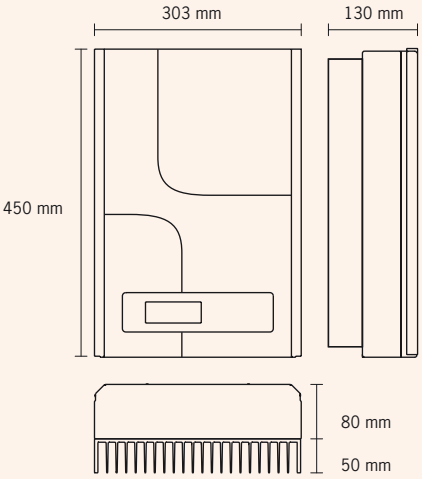
Operating conditions
The SOLPLUS 25 – 55 inverters are suitable for installing in small, medium-sized and large systems. They are available in two different enclosure variants, compliant with IP 21 or IP 54, and feature a fully integrated communication platform. Our customers get everything they want from a PV inverter, and can still connect optional extras with ease.

Power rating range of the SOLPLUS inverters
SOLPLUS 25 = 2.5 kW
SOLPLUS 35 = 3.8 kW
SOLPLUS 50 = 4.6 kW
SOLPLUS 55 = 5.5 kW

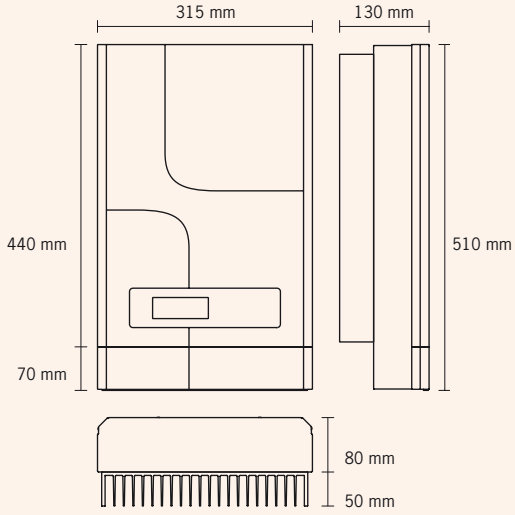
Operating principle and installation planning
Solutronic's SOLPLUS 25 – 55 inverters are transformerless, single-phase, grid-connected, solar inverters. All VDEW regulations that relate to single-phase inverters must be complied with in Germany. Thanks to their capability SOLPLUS 25 - 50 inverters can be operated as standalone devices.
When SOLPLUS 55 inverters are being installed, attention must be paid when configuring the system to ensure the system phases are utilised uniformly.
In the case of installations with a nominal AC power rating >30 kW, it's also necessary to monitor the phase, this function being implemented in the inverter software. The function can programmed once a master-slave network has been set up.

Grid monitoring
All inverters are equipped with a software-controlled, grid monitoring function that measures the grid frequency, impedance and grid voltage of the inverters at regular intervals. The requirements differ from country to country and installation settings can be adjusted to comply with national requirements and the peculiarities of national grid systems. The safety-relevant parameters are protected by various password levels.
In the event of unfavourable circumstances, utility companies must be able to reduce the output of installations with a nominal AC power rating >100 kW. This is done by means of the master-slave network and a SOLCOMBOX (see page 20) with Power Reduction Card.

Approvals/certification
CE
VDEW 0126-1-1
ENEL DK 5940
AS 4777.2



IP 21



IP 54

Language selection
Each inverter supports four different languages. When ordering your units, please choose the combination of languages (language pack) you want and select the language you want to use as your default language. You can change the language used by your installation later if you want (from among the four languages in the language pack).

Selecting enclosure variant
The IP 21 enclosure has ventilation slots at the sides to guarantee optimum ventilation and cooling. All ports and connections on the inverter are easily accessed. This variant is suitable for all dust-free indoor areas.

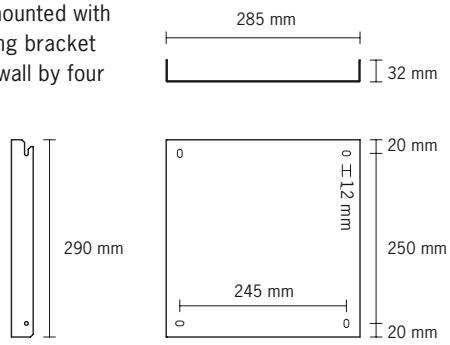
The enclosed and dust-protected IP 54 variant is fitted with a temperature-controlled fan for optimum heat dissipation. The inverters are splashproof and suitable for semi-outdoor use.

Selecting DC options
To make it easier to connect the inverters to the connections on the solar modules, we currently offer two different DC connector options: Tyco and Lumberg 4* (*compatible with MC4).

Installation instructions
We recommend that you take very great care when choosing the installation position and appropriate enclosure variant in order to ensure that the inverters will enjoy a very long service life. When planning the entire installation, make sure the inverters are installed adequately spaced and with sufficient clearance from other equipment in the installation area. We recommend a clearance of 30-50 cm one either side and min. 20 cm above and below each unit.

Further detailed information can be found in the installation instructions we supply with the inverters.
The inverters are mounted with the aid of a mounting bracket that is fixed to the wall by four screws.

Mounting bracket



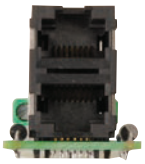
How to order
Your order should contain the following information:
Power rating/Degree of protection-DC option/No. of strings-Language pack-Default language
Example: SP25/IP54-TYC/2-de/cz/fr/it-1
Note: We are only able to handle an order if you state the power rating and degree of protection you require. If you fail to include the other specifications in your order, we will supply you with our standard version inverter (specifications in brackets).
To determine the correct order designation for the inverter you require, please go through each of the following points and write down the abbreviated order code for the variant you want:

- Select the power rating: SP 25, SP 35, SP 50, SP 55
- Select the degree of protection: IP 21, IP 54
- Select the DC option: LC4, TYC (Standard: TYC)
- Select the no. of strings on the DC side: 2 or 3 (Standard: 2)
- Select the language pack (Standard: de/cz/fr/it)
  Language pack de/cz/fr/it = German, Czech, French, Italian
  Language pack de/en/es/tr = German, English, Spanish, Turkish
  Language pack de/en/fr/it = German, English, French, Italian
  Language pack de/en/es/cz= German, English, Spanish, Czech
- Select the default language from the language pack (Standard: 0)

	0	1	2	3
Language pack de/cz/fr/it	German	Czech	French	Italian
Language pack de/en/es/tr	German	English	Spanish	Turkish
Language pack de/en/fr/it	German	English	French	Italian
Language pack de/en/es/cz	German	English	Spanish	Czech

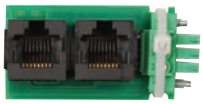
Subject to change without notice. Errors excepted.

Communication and installation monitoring accessories for SOLPLUS 25–55



Patch adapter for X2 for IP 21 enclosure
Patch adapter for fast setting-up of the master-slave network via the X2 RS485 port using patch cables, for IP 21 enclosure.

Order reference:
PATCHADX2-IP21



Patch adapter for X2 for IP 54 enclosure
Patch adapter for fast setting-up of the master-slave network via the X2 RS485 port using patch cables, for IP 54 enclosure.

Order reference:
PATCHADX2-IP54

Lumberg DC mating connector (MC4)
For connecting the solar modules to the inverter, for MC 4 and Lumberg 4* (*compatible with MC4).

Order reference:
STDC-LC

Tyco mating connector
For connecting the solar modules to the inverter, for Tyco.

Order reference:
STDC-TYC

AC mating connector
3-pin AC connection from Wieland Electric.

Order reference:
STAC-SP25-55

Plug-in AC adapter*
Plug-in AC adapter, incl. 1.5 m cable, for night-time operation. An AC adapter is needed to supply power for retrieving data from the inverter when the photo-voltaic generator is inactive: 12 V/300 mA

Order reference:
NTZ-SP25-55

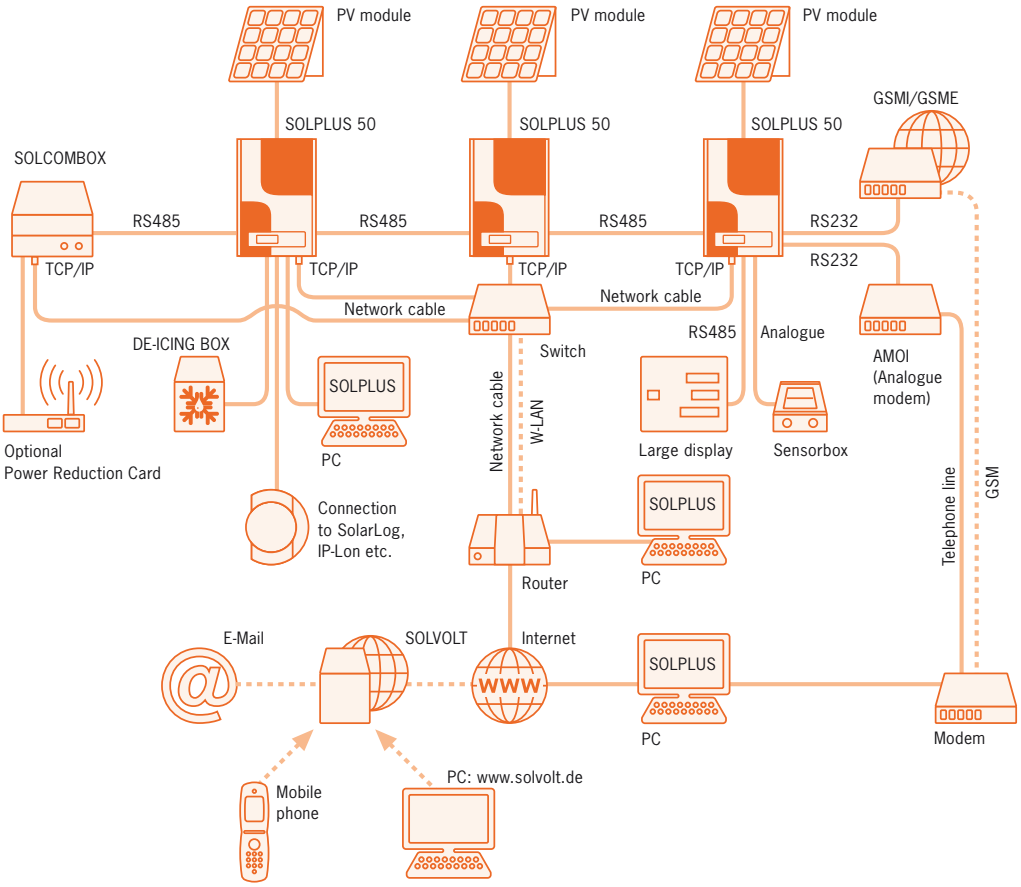
USB/RS485 adapter for wiring
USB/RS485 adapter for reading out the data of an inverter at the RS485 port via the USB port of the PC. The set contains a USB extension cable and a 0.7 m-long adapter cable: for standard wiring.

Order reference:
USB/RS485-D

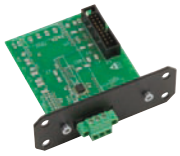
USB/RS485 adapter for patch adapter
USB/RS485 adapter for reading out the data of an inverter at the RS485 port via the USB port of the PC. The set contains a USB extension cable and a 0.7 m-long adapter cable: for connecting with patch adapters.

Order reference:
USB/RS458-P

*Europlug



Communications model
All SOLPLUS 25 – 55 inverters allow all methods of data retrieval to be either connected directly to each individual inverter or be built into each inverter. Each inverter is equipped with two serial ports as well as analogue and digital inputs and outputs to enable special functions to be integrated. The cheapest method of remote-monitoring the inverters is to use their built-in Ethernet port.



RS485 option card
RS485 option card for connecting several communication interfaces. An additional RS485 option card, for example, must be used for simultaneous use of master-slave data communication and a large display.

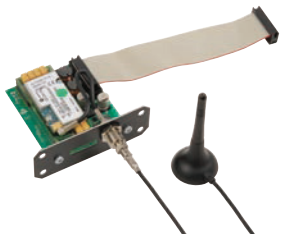
Order reference:
OKRS485

Built-in analogue modem
Built-in analogue modem for remote retrieval of data from max. 32 inverters. The built-in modem card allows remote data retrieval without additional hardware and power supply, and with minimal power consumption.

Order reference:
AMOI

External GSM modem
GSM modem for external and mobile connection to an inverter for remote retrieval of data from max. 32 inverters (incl. adapter cable and plug-in AC adapter). Data retrieval via GSM without connecting to a telephone line.

Order reference:
GSME



Built-in GSM modem
GSM modem for remote retrieval of data from max. 32 inverters. Data retrieval via GSM without connecting to a telephone line.

Order reference:
GSMI

Aerial extension cable for GSM
10 m extension cable for GSM aerial.

Order reference:
GSMAK-m

Boot dongle
Boot dongle for installing new firmware with the software program SOLBoot over RS232.

Order reference:
BD

USB/RS232 adapter
USB/RS232 adapter for reading out the data of an inverter connected to the RS232 port via the USB port of the PC. The set contains a USB extension cable.

Order reference:
USB/RS232

Subject to change without notice. Errors excepted.

SOLPLUS 25
Technical Data

DC input

Max. DC power	3000 W
Max. DC voltage	850 V
DC start voltage	380 V
Rated input voltage	450 V
Max. MPP voltage	750 V
Min. MPP voltage	345 V
Max. input current	8.7 A
Number of MPP trackers	1

AC output

Nominal AC output	2500 W
Max. output AC	2850 W
Max. AC output voltage	253 V
Min. AC output voltage	210 V
Nominal output voltage	230 V
Max. output current	10.9 A
Rated power	2500 W
Distortion factor	2 %
Rated frequency	50 Hz
Min. frequency	49.8 Hz
Max. frequency	50.2 Hz
Rated power factor	> 0.99

Mechanical data

Dimensions in mm (W x H x D) IP 21	450 x 303 x 130
Dimensions in mm (W x H x D) IP 54	510 x 315 x 130
Weight IP 21 / IP 54	18 Kg / 21 Kg
Ambient temperature	-20 °C ... +60 °C
Derating	+40 °C
Topology	transformerless
Cooling concept	free convection
Noise emission	< 35 db(A)
Max. humidity	90 %
DC-plug in	2 / 3
Protection class	IP 21 / IP 54
AC connection	Wieland RST (RST25I3S)
DC connection	Tyco/C4* (*MC4 compatible)

Security

DC circuit breaker	✓
All-pole-sensitive leakage current monitoring unit	✓
Earth fault monitoring	✓
Lockable front	–
Kind of grid monitoring	single-phase (according to VDE 0126)
Protection class II	IEC 62103 / DIN EN 62109

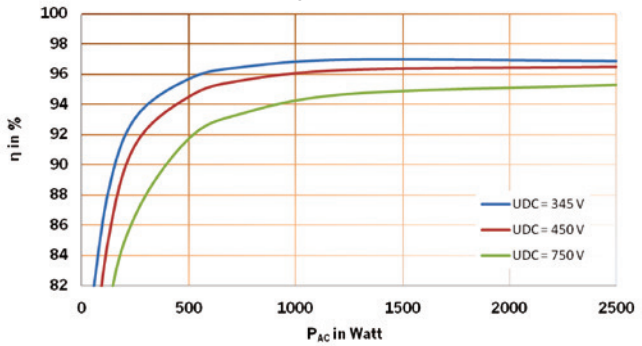
Communication

Display	20 signs, 4-line
Language	Ger/Eng/Spa/Fre/Ita/Tur/Cze
Data logger	integrated, freely programmable
Memory size	30 KB
Interface	RS485, RS232, Ethernet

Efficiency

Max. efficiency	97.2 %
Euro ETA	96.6 %

Efficiency curve SOLPLUS 25



Efficiency

Internal consumption at night	0.01 W
Internal consumption at day	< 9 W
Input from	10 W

Conformity and warranty

Conformity	www.solutronic.de
EU conformity	✓
VDEW conformity	✓
ENEL DK5940	✓
AS 4777.2	✓
Warranty	6 years
	12 years optional

SOLPLUS 35
Technical Data

DC input

Max. DC power	4350 W
Max. DC voltage	850 V
DC start voltage	380 V
Rated input voltage	450 V
Max. MPP voltage	750 V
Min. MPP voltage	345 V
Max. input current	12.5 A
Number of MPP trackers	1

AC output

Nominal AC output	3800 W
Max. output AC	4000 W
Max. AC output voltage	253 V
Min. AC output voltage	210 V
Nominal output voltage	230V
Max. output current	16.5 A
Rated power	3800 W
Distortion factor	2 %
Rated frequency	50 Hz
Min. frequency	49.8 Hz
Max. frequency	50.2 Hz
Rated power factor	> 0.99

Mechanical data

Dimensions in mm (W x H x D) IP 21	450 x 303 x 130
Dimensions in mm (W x H x D) IP 54	510 x 315 x 130
Weight IP 21 / IP 54	18 Kg/21 Kg
Ambient temperature	-20 °C ... +60 °C
Derating	+40 °C
Topology	transformerless
Cooling concept	free convection
Noise emission	< 35 db(A)
Max. humidity	90 %
DC-plug in	2/3
Protection class	IP 21/IP 54
AC connection	Wieland RST (RST25I3S)
DC connection	Tyco/LC4* (* MC4 compatible)

Subject to change without notice. Errors excepted.

Security

DC circuit breaker	✓
All-pole-sensitive leakage current monitoring unit	✓
Earth fault monitoring	✓
Lockable front	–
Kind of grid monitoring	single-phase (according to VDE 0126)
Protection class II	IEC 62103 / DIN EN 62109

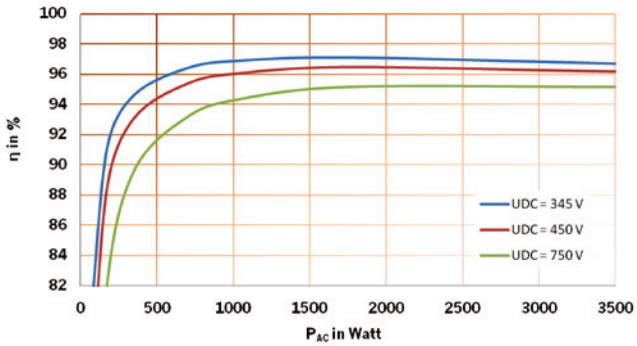
Communication

Display	20 signs, 4-line
Language	Ger/Eng/Spa/Fre/Ita/Tur/Cze
Data logger	integrated, freely programmable
Memory size	30 KB
Interface	RS485, RS232, Ethernet

Efficiency

Max. efficiency	97.3 %
Euro ETA	96.8 %

Efficiency curve SOLPLUS 35



Efficiency

Internal consumption at night	0.01 W
Internal consumption at day	< 9 W
Input from	10 W

Conformity and warranty

Conformity	www.solutronic.de
EU conformity	✓
VDEW conformity	✓
ENEL DK5940	✓
AS 4777.2	✓
Warranty	6 years
	12 years optional

SOLPLUS 50
Technical Data

DC input

Max. DC power	6000 W
Max. DC voltage	850 V
DC start voltage	380 V
Rated input voltage	450 V
Max. MPP voltage	750 V
Min. MPP voltage	345 V
Max. input current	16.2 A
Number of MPP trackers	1

AC output

Nominal AC output	4600 W
Max. output AC	5000 W
Max. AC output voltage	253 V
Min. AC output voltage	210 V
Nominal output voltage	230V
Max. output current	21.7 A
Rated power	4600 W
Distortion factor	2 %
Rated frequency	50 Hz
Min. frequency	49.8 Hz
Max. frequency	50.2 Hz
Rated power factor	> 0.99

Mechanical data

Dimensions in mm (W x H x D) IP 21	450 x 303 x 130
Dimensions in mm (W x H x D) IP 54	510 x 315 x 130
Weight IP 21 / IP 54	19 Kg / 22 Kg
Ambient temperature	-20 °C ... +60 °C
Derating	+40 °C
Topology	transformerless
Cooling concept	free convection + aerator
Noise emission	< 35 db(A)
Max. humidity	90 %
Max. number of strings	2/3
Protection class	IP 21 / IP 54
AC connection	Wieland RST (RST25I3S)
DC connection	Tyco / LC4* (* MC4 compatible)

Security

DC circuit breaker	✓
All-pole-sensitive leakage current monitoring unit	✓
Earth fault monitoring	✓
Lockable front	–
Kind of grid monitoring	single-phase (according to VDE 0126)
Protection class II	IEC 62103 / DIN EN 62109

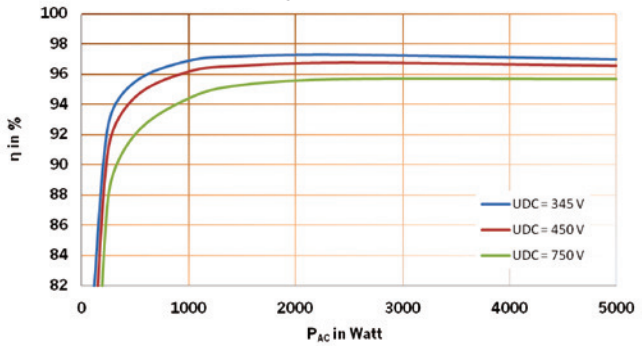
Communication

Display	20 signs, 4-line
Language	Ger / Eng / Spa / Fre / Ita / Tur / Cze
Data logger	integrated, freely programmable
Memory size	30 KB
Interface	RS485, RS232, Ethernet

Efficiency

Max. efficiency	97.4 %
Euro ETA	97 %

Efficiency curve SOLPLUS 50



Efficiency

Internal consumption at night	0.01 W
Internal consumption at day	< 9 W
Input from	10 W

Conformity and warranty

Conformity	www.solutronic.de
EU conformity	✓
VDEW conformity	✓
ENEL DK5940	✓
AS 4777.2	✓
Warranty	6 years
	12 years optional

SOLPLUS 55
Technical Data

DC input

Max. DC power	6600 W
Max. DC voltage	850 V
DC start voltage	380 V
Rated input voltage	450 V
Max. MPP voltage	750 V
Min. MPP voltage	345 V
Max. input current	17.4 A
Number of MPP trackers	1

AC output

Nominal AC output	5500 W
Max. output AC	5800 W
Max. AC output voltage	253 V
Min. AC output voltage	210 V
Nominal output voltage	230V
Max. output current	24 A
Rated power	5500 W
Distortion factor	2 %
Rated frequency	50 Hz
Min. frequency	49.8 Hz
Max. frequency	50.2 Hz
Rated power factor	> 0.99

Mechanical data

Dimensions in mm (W x H x D) IP 21	450 x 303 x 130
Dimensions in mm (W x H x D) IP 54	510 x 315 x 130
Weight IP 21 / IP 54	19 Kg/22 Kg
Ambient temperature	-20 °C ... +60 °C
Derating	+40 °C
Topology	transformerless
Cooling concept	free convection + aerator
Noise emission	< 35 db(A)
Max. humidity	90 %
Max. number of strings	2/3
Protection class	IP 21/IP 54
AC connection	Wieland RST (RST25I3S)
DC connection	Tyco/LC4* (* MC4 compatible)

Subject to change without notice. Errors excepted.

Security

DC circuit breaker	✓
All-pole-sensitive leakage current monitoring unit	✓
Earth fault monitoring	✓
Lockable front	–
Kind of grid monitoring	single-phase (according to VDE 0126)
Protection class II	IEC 62103 / DIN EN 62109

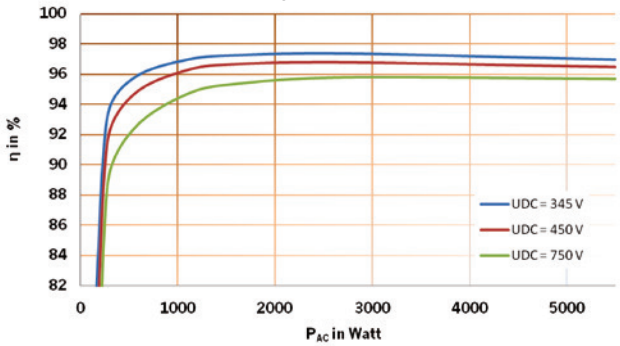
Communication

Display	20 signs, 4-line
Language	Ger/Eng/Spa/Fre/Ita/Tur/Cze
Data logger	integrated, freely programmable
Memory size	30 KB
Interface	RS485, RS232, Ethernet

Efficiency

Max. efficiency	97.4 %
Euro ETA	97 %

Efficiency curve SOLPLUS 55



Efficiency

Internal consumption at night	0.01 W
Internal consumption at day	< 9 W
Input from	10 W

Conformity and warranty

Conformity	www.solutronic.de
EU conformity	✓
VDEW conformity	✓
ENEL DK5940	✓
AS 4777.2	✓
Warranty	6 years
	12 years optional